

2 PROPOSED ACTION AND ALTERNATIVES

DOE's proposed action is to continue to construct and, ultimately, to operate NIF, as decided in the ROD for the SSM PEIS. The SSM PEIS, the NIF PSA (DOE 1996a), and the technology basis report (DOE 1996b) analyzed five site alternatives and two design options (indirect and direct drive) for NIF. Those alternatives and options are not revisited in this SEIS. Instead, this SEIS examines continuing construction and operation of NIF in light of recently discovered PCB wastes in the NIF Construction Area and residual PCB contamination in the ETC Area. This SEIS also presented the results of the characterization studies that DOE conducted and completed in 1998 and 1999 pursuant to the Joint Stipulation and Order.

2.1 NO ACTION ALTERNATIVE

The Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA) require that an EIS consider a no action alternative (40 CFR 1502.14(d)). DOE has examined the no action alternative from two perspectives. The first defines no action as the ongoing activity of continuing to construct and operate NIF. The second assumes that DOE would cancel the NIF project, ceasing construction and making the site usable for another purpose. Section 4.2 describes the consequences of continuing to construct and operate the NIF. Section 4.3 describes the consequences of ceasing NIF construction.

2.1.1 No Action as an Ongoing Activity (DOE's Preferred Alternative)

CEQ has indicated that, in the case of ongoing activities, the no action alternative represents the status quo. ("[T]he 'no action' alternative may be thought of in terms of continuing with the present course of action until that action is changed" [Forty Most Asked Questions Concerning CEQ's NEPA Regulations, Question 3, 46 FR 18026, 18027 (March 23, 1981)].)

DOE's current action to construct and operate NIF, as proposed and analyzed in the NIF PSA of the SSM PEIS, represents the status quo. Under this interpretation of the no action alternative, DOE would make no changes in the design of NIF, would undertake no deviations in construction techniques, and would impose no operational changes in response to the information regarding site contamination obtained during the characterization studies completed pursuant to the Joint Stipulation and Order.

2.1.2 No Action as Ceasing Construction of NIF at LLNL

Because no action could also be interpreted as “no project at LLNL,” DOE has also included this construct of no action in this SEIS. A decision to stop constructing NIF at LLNL could result either in a decision to construct and operate the facility at another site or in a decision to cancel the project entirely. The impacts of constructing and operating NIF at other sites and of not constructing or operating the facility at LLNL were analyzed in detail in the SSM SEIS, the NIF PSA, and the technical basis and site comparison report (DOE 1996b). The impacts of cleaning up PCB contamination at the present site are discussed in this SEIS.

DOE believes that “no action” when defined as ceasing construction of NIF is not a reasonable alternative. Moving NIF to another site would be reasonable to consider only if the characterization studies had determined that the contamination caused by buried hazardous, toxic, or radioactive materials was so extensive as to raise serious questions about the advisability of continuing the project in its current location. This is not the case, since, as summarized below in Section 2.3 and discussed in detail in Chapter 4, no new contamination was found. Canceling the project would be reasonable to consider only if the DOE’s purpose and need has changed so that NIF is no longer required. This also is not the case. However, to provide a comparison, the impacts of ceasing construction are briefly analyzed in Section 4.3.

The conventional construction of the NIF facility is now approximately 80% complete, and moving NIF to another site at this time would have significant economic and programmatic consequences (DOE 1996b) and is unnecessary considering the results of Phase I and Phase II characterization activities. The NIF requires large-scale laser research, development, and support facilities that are present only at LLNL. These requirements for scientific infrastructure for NIF would have to be established at another site if NIF were moved.

As highlighted in Section 2.3 and discussed in Chapter 4, no additional previously unknown or undiscovered sources of contaminated objects were found at the NIF Construction Area as a result of Phase I and Phase II characterization activities, including magnetometer survey (SPPORTS 1997, 1998a-b), and the impacts of cleanup were minor — below levels of concern for human health. The residual contamination found at the ETC Area is not in the area of NIF and would not affect NIF construction or operation. Magnetometer surveys did not identify any contaminated objects in the ETC (SPPORTS 1999), and the site was cleaned up to EPA Region 9 Preliminary Remediation Goals (PRGs) for an industrial site (Bainer 1999). The impacts analyzed in this SEIS pertaining to cleanup of wastes or residual contamination apply to both alternatives of continuing to construct NIF and to cease NIF construction. Section 4.3 briefly describes the impacts of ceasing NIF construction.

2.2 ACTION ALTERNATIVES (ELIMINATED FROM DETAILED STUDY)

The CEQ regulations also require that an EIS analyze all reasonable alternatives to the proposed action and discuss the reasons why other alternatives were eliminated from detailed study [40 CFR 1502.14(a)]. As stated by CEQ: “[w]hat constitutes a reasonable range of alternatives depends on the nature of the proposal and the facts in each case” (Forty Most Asked Questions, Question 1, 46 FR 18027). As discussed below, DOE believes that the facts surrounding the proposed action and purpose and need for this SEIS lead to the conclusion that there are no reasonable action alternatives under the circumstances, and, therefore, that all action alternatives should be eliminated from detailed study.

Possible action alternatives would consist of various ways to modify the manner in which DOE continues to construct and operate the facility to take into account the results of the characterization studies. These modifications could include changes in the design or changes in the manner of constructing or operating the facility to avoid releasing contamination, as well as modifications in the construction schedule to allow any contamination that was discovered to be remediated before proceeding.

This group of alternatives would be reasonable to consider only if the characterization studies concluded that there are additional buried hazardous, toxic, or radioactive materials or soils in the area of the NIF construction site that would adversely impact human health and the environment. Phase I and II evaluations of the NIF site pursuant to the Joint Stipulation and Order have uncovered no positive indications of hazardous, toxic, and/or radioactive material. The hazardous materials discovered during NIF construction have already been cleaned up. These materials are now below levels of concern for impacts to the environment or human health. Characterization studies have shown that there is a very low likelihood of further discovery of any buried wastes. Further NIF construction and NIF operations would not result in potential health impacts to workers or the public from hazardous, toxic, or radiological materials related to buried wastes. Therefore, no design, construction, or operation modifications to address the presence of such materials need be considered. Any contaminants within the area defined in the Joint Stipulation and Order, and outside the NIF construction site, will be addressed under the CERCLA process with CERCLA RPM oversight.

2.3 SUMMARY OF IMPACTS

This SEIS summarizes Phase I and Phase II characterization studies (see Section 4) and evaluates the potential impacts (including cumulative impacts) to LLNL workers and to the public from construction and operation of the NIF because of the possible presence of buried hazardous, toxic, or radioactive materials in the areas in the northeastern quadrant of the LLNL as stipulated in the Joint Stipulation and Order.

Results of Phase I and Phase II investigations show that there is a low likelihood that significant quantities of buried hazardous, toxic, or radioactive materials remain in the stipulated areas. On the basis of these findings, DOE has concluded that the only source of buried materials in the NIF Construction Area was the capacitor landfill discovered in September 1997 and subsequently cleaned up. PCB-contaminated soils recently discovered during maintenance work in the ETC Area are believed to represent residual contamination from capacitors previously excavated during the ETCL closure in 1984 (DOE 1999b).

DOE's analysis of new information regarding soil and groundwater contamination concluded that levels of contamination are well below those that would impact human health. Soil contamination does not present a risk of adverse health effects to workers from respiration of dust. Remedial actions addressing PCB-contaminated soil in the NIF Construction Area and in the ETC Area achieved cleanup criteria determined by applicable guidelines and approved by the RPMs to be protective of human health and the environment. Analyses of potential health impacts to a hypothetical maximally exposed member of the public from dust-borne PCBs potentially generated during these actions found potential exposures to be well below levels of concern (1×10^{-6} cancer risk or 1.0 hazard quotient for noncancer impacts). Protection of groundwater by soil cleanup levels achieved in the two areas was verified through groundwater sampling and modeling analysis. Levels of PCB contamination in groundwater now and projected into the future are calculated to be well below levels considered to present a risk to the public. Construction and operation of NIF would not directly adversely affect groundwater because no groundwater withdrawals or discharges would occur from this facility. Ongoing remediation activities will continue to improve groundwater quality for both the no action alternatives — (1) continuing construction and operation of NIF and (2) ceasing construction of NIF. Potential impacts on the human environment at LLNL are below any level of significance.

The impacts of ceasing NIF construction would depend on whether (1) the facility would be completed and used for another purpose or (2) the facility would be demolished and the site returned to a brownfield condition. For either of these options, employment at LLNL would decline, and reduced employment would have an adverse socioeconomic impact in the Tri-Valley area. Demolishing the NIF buildings would increase exposure of workers to occupational hazards. The transportation of an estimated 4,400 m³ (5,800 yd³) of nonhazardous wastes off-site and delivery of fill for excavated areas would increase truck traffic, potentially impacting nesting white-tailed kites and increasing the risk of transportation accidents. If the building were reused for another purpose, doses from radionuclides and hazardous materials would remain as assessed for NIF and LLNL. If the NIF facility were demolished, risk from radionuclides and hazardous materials associated with the facility would be absent. Demolition would result in release of dusts (including PM₁₀); the LLNL area is not in attainment for this criteria pollutant. Demolition might further disturb paleontological resources that were left in place during NIF construction.